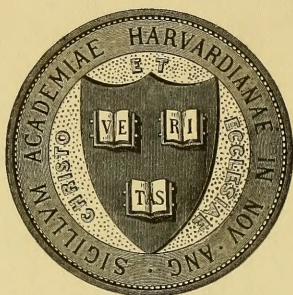




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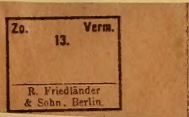


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NOTES ABOUT SOME IN FINLAND FOUND SPECIES  
OF NON-PARASITICAL WORMS.

(TURBELLARIA, DISCOPHORA  
ET  
OLIGOCHETA FENNICA)

MUS. COMP. ZOÖLOGY,  
CAMBRIDGE, MASS.

BY

Dr. AXEL R. SPOOF,  
ÅBO.

ÅBO

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1889.

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The following notes were originally written in the years 1867—72, only for proper use, as, when essaying from the literature to get guidance to the knowledge of animals very often met with within my country, I found that, with except of the leeches, the now enumerated animals were but very little taken notice of by naturalists in the northern countries during our century.

Having thus commenced I by little and little continued from sources accessible to me, to gather contributions to the knowledge of the geographical distribution of those animals, especially in the middle and north of Europe.

The notes by degrees having increased to their present extent and as I no longer could find ability to bestow time on such, sideways from my proper functions lieng researches, I wished at least to interest young naturalists of my country for those animals; and for this purpose I added the diagnoses, which for the most part are borrowed from previous authors.

Meanwhile the notes would probably have been repositied for ever, had not the Fishery-Exhibition at St. Petersburg given impulse again to take up the last mentioned thought.

The notes thence appear without every pretention and I only wish the benevolent reader may not apply on their author the words which Goethe's Faust once was crieng out about Wagner:

Wie doch dem Kopf' nicht jede Hoffnung schwindet,  
Der lebenslang am schalen Zeuge klebt,  
Mit gier'ger Hand nach Schätzen gräbt,  
Und froh ist, wenn er Regenwürmer findet.

---

The names of places in Finland mentioned in this paper are written according to the orthography which is commonly used in the official nomenclature on swedish language; as I think it easier to the readers, if wanted, to make out the places, by showing the name written or printed in the usual and well-known manner.

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The specimens of mine, on which the descriptions are founded, I have, several time ago, given to the museum of the state-lyceum (swedish) in Abo; where they now-to-days are put up.

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-



# I. TURBELLARIA.

## A. PROCTUCHA, Max Schultze.

Animalia ano stipata, sexu discreta.

RHYNCOCOELA, M. Sch. (Nemertinea, Stimpson, Keferstein.)

*Tubus cibarius proboscide praeditus tubulosa, exsertili, ab intestino sejuncta, interdum armata.*

*Enopla*, Keferstein. *Proboscide armata.*

Familia unica

TRAEMACEPHALIDAE, Kfist. *Caput fissuris brevibus transversis respiratoriis instructum.*

*Tetrastemma*, H. & Ehb. *Corpus teretiunculum, paullulum depressum. Caput continuum l. subdiscretum; fovea transversa in medio utriusque lateris (fissurae respiratoriae); fronte truncata; apertura proboscidis in rima transversa terminali. Anus terminalis. Ocelli jr Maricolae.*

*T. obscurum*, M. Sch. *Corpus fere cylindricum; antrorsum aliquantum attenuatum; utrinque truncatum, olivaceum. Oculi jr—vj. Proboscis (oesophagus) stylo uno mediano armata, sacculisque ij styliferis lateralibus, stylis binis. Long. 14 millim.; latit. 1—1,5 m. m.*

*Synon.* *Tetrastemma obscurum*. Max Schultze pag. 62; idem in museo zoologico Kieliae Holsatorum.

*Polia obscura*, Van Beneden, p. 23

*Tetrastemma varicolor*  $\gamma$  *olivaceum*, G. Johnston p. 20 (?); nondum vero Oersted & Diesing.

*Habitat* sub lapidibus lignisque submersis l. in fucis aliisque plantis; passim frequens. — Helsingfors, Åbo (Runsala).

*Obs.* The description and figures of the internal organs given by Van Beneden, as also those given by Max Schultze, quite accord to my observations; but Van Beneden represents the animal threadlike and designs the length to be 5—6 centim. and the breath 2 m. m. — I have seen specimens with 3, 4, 5 and 6 eyes.

## B. APROCTA, M. Sch.

Animalia ano destituta, androgyna; caput fissuris carens.

DENDROCOELA, Ehb. *Oesophagus musculosus, protractilis, peristomio interdum lobato; tractus intestinalis dendritice ramosus; corpus depressum l. planum.*

## Familia

*Monogonopora*, Stimpson. *Apertura genitalis unica.*

PLANARIADAE, Stimpson. *Corpus oblongum, planum, saepe lobis auriculæformibus, rariter tentaculis. Os centrale l. posticum. Oesophagus integer. Apertura genitalis ad posteriora oris sita.*

**Planaria** Müll. *Caput interdum indistincte discretum, trigonum, tentaculis nullis; oculis duobus. Os subcentrale; cylindricum. (Tubi cibarii rami indivisi, Oersted); penis in communi apertura genitalis vestibulo.*

**Pl. torva**, auctorum. *Corpus antice obtuse trilobum, postice acuminatum, supra cinereum l. nigrum; subtus albidum. Lg 8—10; lat. 2,5 m m.*

*Synon.* Fasciola torva, O. F. Müller I. II. 62;

Planaria torva, Oersted 54; Diesing I. 205; Gerstfeldt 262; G. Johnston 11.

Planaria fusca, Linné S. Nat XIII. 3090; Diesing I. 204.

*Habit.* Et aquæ dulcis et subsalinæ incola. — Åbo, Helsingfors, Nådendal, Reso, Helsinge, Mäntsälä.

Diesing attributes to *Planaria torva*: ocellus singulus! — In the »Zeitschrift für wissens. Zoologie», Bd XI p. 89, O. Schmidt gives a description of three species into which, according to his opinion, *Pl. torva*, auctorum, is to be divided. The characters he has got from the shape of the body, especially the fore-part of it, from the position of the eyes, from the colour of the body and the structure of the generative organs. I recollect having sometimes seen specimens that, as for the shape and the colour, have corresponded to his *Pl. lugubris*; but as I have not since got similar specimens for examining, it may be sufficient to have mentioned it by the by! — Gerstfeldt, o. c. p. 262 & 263, describes a new species, *Pl. guttata*. However it seems to me that the characters given by him are rather unessential and fall within the limits of individual variability, as for an example, the smooth in spirit not curled (gekräuselt) margins of the body, the running together of the white spots surrounding the eyes, the flat, leaf-shaped body, the light linear-oblong mesial spot and the two lateral series of 4, 5 or 6 rounded, light spots. — *Planaria*, as Johnston tells, has the tail rounded; which may depend on some mistake; as I, not to reckon the extraordinary capacity of those animals in moving to change the shape of the body, always have had occasion to see the tail of *Pl. lactea*, Johnst., to be very acuminate, the animal being in rest. With regard to the shape of the tail *Pl. torva* is intermediary between *Dendrocoelum lacteum* and *Polycelis nigra*.

**Dendrocoelum**, Oersted. *Caput lobis auriculæformibus; tentaculi nulli; os oesophagusque ut Planariarum (tubi cibarii rami arbusculiformes, Oersted); penis retortæformis, inermis, longe vaginatus.*

**D. lacteum**, Oerst. *Corpus antice emarginato-truncatum, postice acuminatum, album, rosaceum l. violaceum; in medio macula lactea (oesophagus). Lg. 7—10; lat 2—3 m. m.*

*Syn.* Hirudo depressa alba, lateribus acutis, Linné Goth. p. 182 (nondum 250); F. Su. I. p. 165 № 1274 ex parte.

Fasciola hepatica, Linné F. Su. II. p. 505 № 2073 (ex parte); Lin. S. Nat. X p. 648.

Fasciola lactea, O. F. Müller I. II. 61.

Planaria lactea, Fabricius F. Groen. 327; Linné S. Nat. XIII 3090; Diesing I. 203; G. Johnston p. 10.

Dendrocoelum lacteum, Oersted 51; Diesing W. S. B. Bd 44. I. p. 504.

Planaria arethusa, G. Johnston. p. 11.

*Habitat* una cum præcedente, ubique frequentissimum.

*Obs!* This species occurs, as is already told, of various colours. I have met with four chief varieties, viz.  $\alpha$  *normalis* — *lactea*  $\beta$  *plumbea-arethusa*, Johnston;  $\gamma$  *rufa* and  $\delta$  *fusco-cinerea*; and I have very often been able to state that the, when caught, gaily coloured animals, after one or two weeks, by little and little, have lost their colour and grown quite white as snow, to such a degree, that the ramifications of the intestines were to be seen only with great difficulty. Thus it seems to me that G. Johnston is entirely right, when (p. 10) imputing the colour of those animals to their food; but it is yet to be shown what kind of food gives rise to the different colours; as I often have caught all the above mentioned varieties promiscuously on the same stone. According to Gerstfeldt at Irkutsk for this species vicariates *Planaria angarensis*, Gerstf.

**Fam. POLYCELIDEA**, Diesing. *Corpus depressum; pede ventrali nullo aut uno. Caput corpore continuum vel discretum, auriculatum l. exauriculatum, tentaculis nullis. Ocelli vj vel numerosi. Os ventrale, ante vel pone medium corporis situm; oesophago cylindrico vel campanulato. Apertura genitalis unica pone os. Aquarum dulcium incolae vel terrestria.*

**Polycelis**, Ehb. *Corpus planum, latum; ocelli plurimi, ad marginem corporis glabri anteriorem; os plerumque posticum.*

**P. nigra**, Ehb. *Corpus antrosum obtusum, retrorsum paullulum attenuatum, fuscum l. brunneum. Lg 6—11 m. m., lat. 3—4 m. m.*

*Syn.* Fasciola nigra, O. F. Müller I. II. 54.

Planaria nigra, Linné S. Nat. XIII 3087; Oersted 54.

Polycelis nigra, Diesing I. 191; G. Johnston p. 9.

Polycelis brunnea et felina G. Johnston p. 9 & 10.

*Habitat* in aqua vel dulci (Helsing) vel subsalina (Runsala).

*Obs!* According to the characters given by Johnston the



*Polycelis nigra* from Finland would correspond to *P. brunnea*, Johnst. with regard to the shape of the fore-body; but as for the colour and the elliptical shape of the body to *P. felina*, Johnst.

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While keeping up some specimens of *Gasterosteus* in a small subsaline aquarium I once let a specimen of *Planaria* fall into the water. In the same moment one of the fishes snapped at the animal, but immediately left it again and from several movements of his body I understood that the contact with the animal might have been very disagreeable to him. Since that time none of the fishes showed mind to touch such an animal.

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## II. ANNULATA DISCOPHORA, Grube.

(Hirudinea, Vogt; Bedellidea, Johnston; Dicsiferae, Malm.)

Fam. HIRUDINEA, Sav. (Hirudinacea Grube; Bdellinea, Moquin-Tandon.

*Corpus utrinque attenuatum; corporis segmenta distincte annulata (annulis jv l. v. composita); extremitas anterior corpori continua, cavitare prehensili terminata; acetabulum posticum oblique affixum, discretum, anus eidem superior; oesophagus paullulum protractilis, plicis tribus, interdum dentatis, longitudinalibus; sanguine rubro.*

**Hirudo**, Lin. sensu strictiori (*Sanguisuga*, Sav.). *Acetabulum anteriùs annulatum, corpori continuum, lobis anteriore et posteriore praeditum; segmentis tribus, annulisque duobus compositum; plicae oesophageae maxilla seniorali; dentibus acutis, marginalibus, numerosis (60—70), serie duplici dispositis instructa. Oculi decem. Aperturæ genitales inter XXIV—XXV et inter XXIX—XXX segmentum; paria saccorum ventralium numerosa, magna; intestinum tenue; anus minutus rotundatus.*

**H. medicinalis**, Lin. *Corpus supra griseo-olivaceum, fasciis longitudinalibus vj rufo-flavis, aut intus plus minusve atris, aut totis aterrimis pictum; subtus pallide flavo-olivaceum, ut plurimum fasciis marginalibus maculisque nigris. Long. 75 m m., lat. 10 m. m.*

*Syn.* *Hirudo depressa fusca, margine laterali flavo*, Lin. F. Su. I. № 1272.

*Hirudo medicinalis*, Bergman 1757 pag. 308; Lin. Syst. Nat. X p. 649; Lin. F. Su. II. № 2079; O. F. Müller, I. II 37; Lin. Syst. N. XIII. 3095; Johnson Treatise 29; Moquin-Tandon 327; Grube 109; Diesing I. 465; Malm 169; Kessler 110; Johnston 48 & 309;

*Hirudo venaeselector*, Braun 24.

*Hab.* in aquis dulcibus passim. — Rimito; Tenala, as noticed by mr Lühr, apothecary at Pojo; to the north of Onega, Günther. according to Kessler.

Varieties yet unknown.

*Obs!* I am told by apothecaries that the most part of leeches that are sold in Finland should be imported from Russia; though one may also in our country find numberless lakes and ponds suitable as dwellingplaces for those animals.

**Aulastoma**, M.-Tand. *Corpus depresso-cylindricum, antrorsum attenuatum; labium posterius fere nullum; os ampulum, maxillae parvae,*

*dentibus sparsis obtusisque instructae; oesophagus plicis xij longitudinalibus; sacci ventrales minimi l. nulli; venter solum postice saccis ij longis retrorsum directis praeditus; intestinum crassum; anus amplus, semilunaris; oculi ut Hirudinis; aperturae genitales itidem.*

(Secundum celeb. dom. G. Johnston *Aulastoma* familiae *Nephe-lidarum* attribuendum erit, quod nefas.)

**A. sanguisuga**, Bergm. *Corpus supra nigro-brunneum l. nigro-olivaceum, subtus pallide olivaceum. Long. 70 m. m., lat. 12 m. m.*

*Syn.* Hirudo sanguisuga, Bergman 1757 p. 309; Lin. Syst. Nat. ed. X 649 & F. Su. II 505 *N*º 2078; & Syst. N. ed. XIII. p. 3095; Johnson 30

Hirudo Gulo, Braun 12.

Hirudo vorax, Johnson 62.

Aulastoma Gulo, Moquin-Tandon 313; Aulostoma Gulo, G. Johnston 46 & 307 (not the synonymes given by him);

Aulostomum Gulo, Diesing I. 461; and Aulastomum Gulo, Diesing. W. S. B. 33 p. 499.

Aulacostomum Gulo, Grube 110; Gerstfeldt 266; Aulacostoma Gulo, Kessler 110.

Aulostoma sanguisuga, Malm 180.

*Pullus:* Hirudo nigra, Johnson 32 (?).

*Varietates:*  $\alpha$  *normalis*, M.-Tand. frequentissima;  $\beta$  *fuliginosa*, M.-T.;  $\gamma$  *olivacea*, M.-T.  $\eta$  — M.-T.? *Corpus supra olivaceum, maculis oblongis, fuscis, per series longitudinales laterales quatuor l. sex dispositis; subtus laetius olivaceum, punctis irregularibus nigris adpersum.*

*Habit.* in aquis dulcibus ubique sat frequens.

Åbo, Reso, Helsinge, Helsingfors, Sääksmäki (Gadd); S. East of Karelia (J. Sahlberg); Hogland (Brenner); environs of St Petersburg, in Onega as far as to Povenetz, in Uksh-osero and other lakes around Onega, in Ladoga as far as to Sordavala, according to Kessler. — The variety  $\eta$  I have got in Åbo. — Moreover the zoological museum at Helsingfors has got an entirely white specimen from — ?.

*Obs!* In the month of August 1870 I in Pargas found close to the shore of a secluded bay of the sea (subsaline) a fullgrown individual of this species. It was lieng contracted in the mud under a thimber; no fresh-water was to be found in the neighbourhood.

**Nephelis**, Sav. *Corpus depressum, antice attenuatum, obsolete annulatum; oesophagus plicis tribus longitudinalibus inermibus; oculi viij in serie semicirculari transversa dispositi, jv in primo, jv in tertio annulo; penis inter XXXIV—XXXV; vulva inter XXXVII—XXXVIII annulos (interdum XXXI—XXXII & XXXIV—XXXV)*

**N. octoculata**, Bergm. *Corpus supra, subtusque convexiusculum margine acuto, crenulato, brunneum, carneum l. griseum; concolor l.*



*sparse punctatum, lineatum l nigro-reticulatum. Long. 35 m. m., lat. 5 m. m.*

*Syn.* Hirudo depressa nigra abdomine subcinereo, Lin F. Su. I № 1273.  
Hirudo octopunctata, Bergm. 1756.

Hirudo octoculata, Bergm. 1757 p. 311; Lin. Syst. Nat. ed. X. 649; Lin. F. Su. II 506 № 2080.

Hirudo vulgaris, O. F. Müller I II. 40; Lin. Syst. Nat. XIII p. 3096; Braun 39; Johnson 33;

Nephelis octoculata, Moquin-Tandon 302; Malm 186; G. Johnston 44 & 305.

Nephelis vulgaris, Diesing I. 456; Grube 110; Kessler 111; Gerstfeldt 265.

Nephelis reticulata, Malm 190.

*Capsula ovulorum:* *Syn.* Coccus aquaticus, Linnaei Goth. & F. Su. I. p. 220; Bergman 1756.

*Varietates:* β *sanguinea*, M.-T. (Runsala); δ *lugubris*, M.-T. (Luonnonmaa, Karuna, Nådendal; Parikkala, sec. J. Sahlberg); ε *grisola*; M.-T. (ubique); η *atomaria*, M.-T.; θ *virescens*, M.-T. (amnis Aura); ν . . . . (Muelleri M.-T.?) rufo-brunneum, lineis in medio dorsi duabus longitudinalibus fuscis (Helsinge).

*Habit.* in rivis stagnis paludibusque, omnium frequentissima.

Abo, Reso, Nådendal, Helsinge, Mäntsälä; — Parikkala, Lappvesi, Jacobstad (J. Sahlberg); — in the territory of Olo-netz, in the Onega unto Povenetz and in Uksh-osero (Kessler).

In a verbal discourse (November 1872) with the renowned swedish naturalist mr A. W. Malm in Gothemborough, that gentleman told me that he still adhered to his formerly (o. cit.) expressed opinion about the two pretended species »octoculata» and »reticulata».

*Obs!* In the 25:th of August 1868 I caught a young individual of Aulastoma sanguisuga which, when I was examining its external shape, disgorged — »per os» — an other leech of almost its own length. This one, a young Nephelis octoculata sanguinea, proved itself to be alive, though the forepart of the body — it was been swallowed the fore-body the first — was to such a degree destroyed, that no eyes were to be seen. Yet two days later I still perceived motions in the mutilated body.

Fam. CLEPSINEA, Grube (Albionea e. p et Siphonea, M.-T. Clepsinida, Vogt. Clepsinini, Malm. *Corpus breve, planum, antrorsum sensim attenuatum; corporis segmenta annulis ij composita; oculi in acetabulo antico; oesophagus maxillis carens, proboscidis more exertilis; ventriculus intestinumque sacculis coecis pinnati; anus acetabulo anati superior; sanguis incoloratus.*

*Piscicola*, Blainv. *Corpus elongatum, teretiusculum l. depressum, antrorsum parum angustatum, obsolete annulatum. Caput disciforme,*

*circulare l. subellipticum, parum excavatum, excentrice affixum, corpori continuum l. discretum; acetabulum anale vix discretum, excentrice affixum, abdomine latius.*

**P. piscium**, Bergm. *C. teres fusco-flavum, viride l. cinereum, linea longitudinali mediana utrinque pinnata alba. Ocelli 6, quorum anteriores distantes, lineares. Aperturæ genitales in XXVIII et XXXIV (XXIX et XXX) segmento. Acetabulum anale supra obscure radiatum et intra marginem circulo unico punctis nigris notatum. Long. 45 m. m., lat. 4 m. m.*

*Syn.* *Hirudo teres* extremitatibus dilatatis, Linné F. Su. I. № 1275.

*Hirudo piscium*, Bergman 1757; O. F. Müller I. II. 43; Fabricius F. Groenl. 321 e. p.

*Hirudo geometra*, Linné, S. Nat. X. 650; F. Su. II. 506 № 2083; S. Nat. XIII 3097; Johnson 35.

*Hirudo Galeria*, Braun 35.

*Piscicola piscium*, Moq.-Tandon 294; Malm 229.

*Ichtiobdella geometra*, Diesing I. 440.

*Piscicola geometra*, Grube 112; G. Johnston 43 (with eight eyes!?).

*Habitat* in aquis dulcibus, nec non subsalinis fere ubique — Runsala, Helsingfors, Helsinge.

*Obs!* I do not yet possess facts enough for to decide whether this one and its confined species (Malm op. cit.) really are good species or merely varieties. In subsaline water I have got individuals, as for the colour, resembling to the »*gracilis*», »*piscium*» and »*crassicaudata*» of Malm; the type of »*piscium*, Malm» I have found only in fresh-water (Vanda-river). — A specimen corresponding to »*crassicaudata*, Malm» within except of the eyes, I caught in brackish water on a *Cottus gobio*, Lin.; when keeping up the animal alive for a few days I saw the red colour, by degrees, changes into light yellow.

**P. stellata**, Kollar-Diesing. *C. depressum, obsolete annulatum, utroque margine papillosum, cinereo-album, punctis stellatis nigris undique adpersum. Oculi 6, antici lineares, postici subrotundi, minores. Collum subconicum haud papillosum; acetabulum corpori concolor, limbo cellulis majoribus viij — x cinctum. (Sacci ventrales omnes antice quasi bipartiti; Malm.) Long. 18 m. m., lat. 3 m. m.*

*Syn.* *Ichtiobdella stellata*, Diesing I. 441.

*Platybdella mamillata*, Malm 218

*Piscicola respirans*, Kessler 114.

*Piscium* ectoparasita ad branchias (*Gadus Lota*, Lin.). — The zoological museum of the university at Helsingfors possesses specimens from Helsingfors. — Kessler (op. cit.) has got specimens from Kronstadt.

**Clepsine**, Sav. *Corpus depressum, dilatatum, in globum involubile, convexiusculum. Caput continuum l. subdiscretum. Oculi ij l. plures, ut plurimum in lineas duas longitudinales dispositi. Acetabulum anale ventrale, centro affixum. Anus medioeris, rotundatus. Aperturæ genitales*

XIX—XX XXII—XXIII *M.-Tand.*; aut XX—XXI et XXIII—XXIV *M.-T. & Malm*; aut XXV—XXVI et XXVII—XXVIII *Dies.*; aut XX—XXI et XXVII—XXVIII *Dies.*; aut XX—XXI et XXIV—XXV *G. Johnst.* — *Agrarum dulcium incolae.*

a) Saccorum ventralium paria vj; caput continuum (Clepsine, *M.-T.*)

**C. binoculata**, Bergm. *C. clavatum, depressum, gelatinosum, pellucidum, margine crenulatum, supra punctis nigris exasperatum. Ocelli ij. Segmentum nonum saepe macula brunnea l. nigra supra notatum. Long. 13—20 m. m.; lat 3—5 m. m.*

*Syn.* Hirudo 2-oculata, Bergman 1757; O. F. Müller I. II. 41 Linné S. Nat. XIII. 3096; Braun 53;

Hirudo stagnalis, Linné S. Nat. X. p. 649; F. Su. II. 506 № 2081 (sec. O. F. Müller et A. W. Malm; though Linnaeus himself, S. Nat. X p. 649 tells Hir. stagnalis to be = *H. bioculata*, the description given by him quite as well accords to *Planaria torva* as to the species now mentioned).

Glossiphonia perata, Johnson 26.

Glossiphonia bioculata, Moquin-Tandon 366; G. Johnston 52 & 316

Clepsine bioculata, Diesing I. 448; Grube 113; Malm 195; Kessler 114.

*Habitat* in rivis stagnis paludibusque frequentissima. — Åbo, Reso, Nådendal, Helsing, Helsingfors, Ingå, Mäntsälä; Jacobstad (J. Sahlberg); territory around Onega (Kessler).

*Obs.* Varying in colour: grayish, greenish or light rosy; after *Nepheleis octoculata* the most common leech in Finland.

**C. heteroclitia**, Lin. *C. gelatinosum, ellipticum, depressum, diaphanum, supra cinereum l. flavicans, interdum maculis nigris medianis vj serie longitudinali dispositis; margine subintegrum. Ocelli vj, bini anteriores valde approximati. Sacci ventrales primi parvis oblique antorsum vergentes. Long. 7—8 m. m., lat. 3—5 m. m.*

*Syn.* Hirudo heteroclitia, Linné F. Su. II. 506. № 2085.

Hirudo hyalina, O. F. Müller I. II. 49; Linné S. Nat. XIII. 3097.

Hirudo papillosa, Braun 64.

Hirudo heteroclyta, Johnson 34.

Glossiphonia heteroclitia, Moquin-Tandon 358; G. Johnston 52 & 316;

Glepsine hyalina, Diesing I. 453.

Clepsine heteroclitia, Grube 113; Malm 199; Kessler 113.

*Habitat* in stagnis. — Reso; in Uksh-osero (Kessler).

**C. senoculata**, Bergm. *C. subcartilagineum, ellipticum, depressum; supra cinereo-viride, lineis ij—vj longitudinalibus nigris, duabus distincte granulosis, continuis l. interdum punctis albis interruptis; subtus griseum; margine suberemulatum. Ocelli vj, per paria paralleli. Sacci ventrales primi parvis ut reliqui oblique retrorsum vergentes. Long. 15—22 m. m., lat. 8—10 m. m.*

*Syn.* Hirudo 6-oculata, Bergman 1757, 213;

Hirudo complanata, Linné S. Nat. X. 650; F. Su. II. 506 № 2082;

O. F. Müller I. II. 47; Linné S. Nat. XIII. 3097; Braun 68

Glossiphonia tuberculata, Johnson 25 (ut etiam: *Hirudo lineata*? Johnson 34).

Glossiphonia sexoculata, Moquin-Tandon 353; G. Johnston 51 & 315 (ut etiam: *Glossiph. verrucata*? Johnston 51 & 314).



*Clepsine complanata*, Diesing I. 452; Grube 113; Gerstfeldt 263.  
*Clepsine sexoculata*, Malm 203; Kessler 112.

*Habitat* in aquis dulcibus sat frequens. — Nädendal, Reso, Helsinge, Mäntsälä; S. East of Karelia (J. Sahlberg); Ladoga as far as to Sordavala, Onega unto Povenetz (Kessler).

*Obs!* According to Kessler one of the most common species in the territory of Onega.

I think Gerstfeldt to be in right, when (o. cit. p. 264) identifying *Clepsine complanata* and *verrucata*, F. Müll.

b) *Saccorum ventralium paria vij et ultra* Caput subdiscretum (Lobina, Moquin-Tandon).

**C. marginata** O. F. Müller. *C. subcartilagineum, antrorsum angustatum, fusco-viride, supra macularum flavescentium seriebus jv, medio dorso linearum ejusdem coloris serie notato; margine flavo-albo-fuscoque tessellato. Ocelli jv in series duas longitudinales, sursum convergentes dispositi, postici majores. Long. 20, lat 3—4 m. m.*

*Syn.* *Hirudo marginata*, O. F. Müller I. II. 46; Linné S. Nat. XIII 3098; Johnson 36;

*Hirudo variegata* Braun 61.

*Clepsine marginata*, Fr. Müller 1844 p. 370; Diesing I. 447; Grube 114; Malm 208;

*Glossiphonia marginata*, Moquin-Tandon 375; G. Johnston 339 (ut etiam: *Glossiph. flava*, Johnston).

*Habitat* in rivis stagnisque ad plantas; rara. — Aura-river, Reso, Nädendal; S. East of Karelia (J. Sahlberg).

**C. tessulata**, O. F. Müller. *C. gelatinosum mollissimum subellipticum, plano-depressum antrorsum paululum angustatum, cinereo-viride supra macularum flavescentium seriebus ij—vj notatum, margine cinereo flavoque tessellato. Ocelli vij in series duas longitudinales dispositi. Pars oesophagea tractus cibarii sacculis jv coecis, quorum medii bipartiti; diverticula ventralia vij bigeniculata, fundo bi-l. tripartita; septimum fundo suo fundo ultimi saccorum rectalium attingens, latere exteriore diverticulis jv minoribus, praeter fundum diverticuliformem praeditum; sacci rectales jv, quorum ij anteriores antrorsum, postici retrorsum vergentes. Long. 18—25, lat. 3—5.*

*Syn.* *Hirudo tessulata*, O. F. Müller I. II. 45; Linné S. Nat. XIII. 30.8; Braun 56; Johnson 33.

*Clepsine tessulata*, Fr. Müller 1844 p. 370; Diesing I. 447; Malm 213.

*Glossiphonia tessellata*, Moquin-Tandon 379; G. Johnston 312.

*Clepsine tessellata*, Grube 114.

*Habitat* in rivis stagnis paludibusque haud frequens. — Nädendal, Reso, Mäntsälä; S. East of Karelia (J. Sahlberg). — Medio in mensis Julii individua legi ova gerentia.

*Obs!* Of this species I have got two varieties without any intermediary, viz: a small dark one corresponding to *Clepsine tessulata*, Malm, within except of the dilatation of the neck; and an almost thrice as large but paler one

The zoological museum of the university to Helsingfors possesses a specimen of this animal noted: Ishavet (the northern frozen ocean) Kola, by mr G. Selin!

*C. costata*, Fr. Müll. *Caput discretum. Corpus subcartilagineum, dilatatum, fuscescens. Dorsum convexiusculum vitta media longitudinali flava nigro interrupta, lineisque punctorum obscuriorum prominentibus utrinque binis ternisque quasi costatum. Oculi ij subrotundi. Long. 40—50 m. m.*

*Syn.* Clepsine costata, Fr. Müller 1846 p. 82; Grube 113 & 150; Diesing T. 450; Kessler 113.

Glossiphonia catenigera, Moquin-Tandon 373.

Clepsine catenigera, Diesing W. S. B. 33 p. 493.

*Habitat:* ad insulam Valamo in Ladoga (Kessler).

*Nota.* Ordini Myzhelminthorum, sec. Diesing, subordini Bdellideorum, tribui Monocotyleorum subtribuique Calicotyleorum adscribo animalculum quod Lumbriculo variegato adhaerens inveni; cujus corpus segmentis viij confectum acetabulo anali praeditum spinis duabus retrorsum directis instructo. Extremitas cephalica acetabulo destituta, ciliis autem vibratilibus obsita. Oculi nulli. Intestina inconspicua. Segmentum quintum caeteris majus ampliusque, adeo ut animal irritatum, Testudinum more, totum corpus in idem contrahere possit. Longit. 0,2 m. m.

*Obs!* The late professor Alexander von Nordman once told he had got specimens of Branchiobdella astaci; however the Zoological museum of the Helsingfors-university does not possess any.

Fam. ACANTHOBDELLEA, Grube (et genus familiae unicum).

*Acanthobdella*, Grube. *Corpus fere fusiforme. depressiusculum, antrorsum sensim attenuatum; ibidem setae uncinatae per paria aliquot biseriatis positae. Lobus cephalicus (Kinberg; Kopflappen, Grube) exiguus l. inconspicuus, minimeque acetabulum format, unde acetabulum anticum nullum. Os inferum, subterminale, minimum. Aperturae genitales solitariae, approximatae, in linea ventris mediana anticam versus extremitatem sitae — in XXXI et XXXII segmento, sec. Diesing. — Acetabulum anale minutum, cujus in medio orificium ani. Segmenta corporis circiter lxxx.*

**A. peledina**, Grube. *Antica corporis extremitas deorsum paululum inclinatum. setarumque paribus xx munitum, quaterna in segmento primo, secundo, tertio, quinto et nono. Os orale in primo segmento. Corpus pallide cinereo-flavum.*

*Syn.* *Acanthobdella peledina*, Grube 116; Diesing W. S. B. 46 p. 510; Kessler 115.

*Habitat:* In Onega, Salmoni salvelino adhacrentem legit Kessler.

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### III. OLIGOCHAETA.

(Annelides setigères abanches, d'Udekem.)

Fam. LUMBRICINA, Sav.-d'Udekem (*Oligochètes terri-  
coles*, Claparède).

*Corpus segmentis multis compositum; tegumenta corporis valde musculosa, opaca; lobus cephalicus* (Kinberg = *la levre* = *die Oberlippe* = *Kopflappen*, Grube = *the first segment*, G. Johnston) *conicus, labrum superius format; segmentum buccale* (Kinberg = *Mundsegment*, Grube = *the second or buccal segment*, G. Johnston) *inermis; tubus cibarius rectus, os inferum; ventriculus musculosus; anus terminalis. Setae semper uncinatae, parum prominentes. Oculi nulli. Sanguis ruber; apparatus circulationis dilatationibus lateralibus [cordibus] multis stipatus. Orula perparva, plura in capsulis conglutinata.*

*Lumbricus*, Lin. *Lobus cephalicus a segmento buccali distinctus. Setae singulae in seriebus viij longitrorsum dispositae. In antica corporis parte zona tumida, torosa, glandulosa, cingulum l. clitellum, pluribus segmentis composita; nec non tubercula ventralia.*

a. *Tubercula ventralia* (Kinberg = *les grands pores*, Savigny = *vulva*, Hoffmeister) in XV segmento [in XVI sec. Hoffm.].

aa. *Setae per paria approximatae; par superius latero-ventrale l. fere laterale, par inferius ventrale. Lobus cephalicus retrorsum in processum qui segmentum buccale totum. findit, productum.*

1. *Cingulum in segmento XXIV, XXV, XXVI—ve ortum semper segmenta sex complectitur. Corporis segmenta circiter xli.*

*L. rubellus*, Hoffm. *Corpus ante cingulum fere cylindricum rufobrunneum, antrorsum attenuatum; pone cingulum applanatum, badium, subtus pallidius. Lobus cephalicus segmento buccali aliquanto brevior, infra indistincte sulcatus; processus ejusdem sulco transverso, saepe vix conspicuo. Tubercula ventralia saepe desunt. Cingulum laete rufum; papillarum. [Saugnäpfe. Hoffm.] paria ij distincta. Segmenta bi-et tri-annulata. Long. circ. 100 m. m. — Animal parvum: ante cing. 25 m. m., in cing. 7 et pone cing. 39 m. m.*

*Synon.* *Lumbricus laevis* ex p. Linné F. Su. I. N° 1270.

*Lumbricus terrestris* ex p. Linné F. Su. II. 504 N° 2073; ex p.

O. F. Müller I. II. 24.; *L. terr. minor*, Linné S. Nat. XIII. 3083; *L. terrestris* ex p. G. Johnston 58 & 324.

*Lumbricus rubellus*, Hoffmeister 1843 p. 187; Hoffm. Regenw. 21; Grube 99 & 145; d'Udekem, *Lombricins* 39; Eisen 957.

*Habitat* humo, ubique frequentissimus. — Åbo, Reso, Ekenäs, Skuru, Fagervik, Helsingfors; Mäntsälä.

2 Cingulum in segmento XXIX, XXX, XXXII—ve ortum segmenta complectitur sex, septem l. octo; corporis segmenta clx—clxxx.

**L. Agricola**, Hoffm. *Habitus fere antecedentis. Corpus carneum; per medium dorsi linea obscurior. Lobus cephalicus longitudine segmento buccali par, deorsum decussatus, infra longitudinaliter sulcatus; processus ejusdem sulco transverso, interdum duplici. Verrucae ventrales [= Wülste, Hoffm.] in VIII. IX X et XXVI segmento. Cingulum prominens, a segmentis vicinis discretum, rufescens; papillarum paria r — rj parum distincta. Segmenta bi-et triannulata. Long. circ. 200 m. m. — Animal parvum; ante cing. 27, in cing. 5 et pone cing. 65 m. m*

*Synon.* Lumbricus terrestris major Linné F. Su. II. 504 № 2073. S. Nat. XIII. 3084.

Lumbricus terrestris ex p. O. F. Müller I. II. 24; Fabricius, F. Groenl. 276; Eisen 954; G. Johnston 58 & 324.

Lumbricus Agricola, Hoffmeister, de Vermibus. 24; Hoffm. 1843 p. 186; Regenwürmer 5; d'Udekem, Lumbricins 35; Kessler 103.

Lumbricus terrestris; Grube 99 & 145.

*Habitat* in hortis, agris, fimetis, quercetisque, antecedenti haud rarior. — Abo, Helsingfors; St Petersburg and the territory around Onega (Kessler).

Nota. *Lumbricum purpureum*, in fagetis Scaniae celeberrimo Eisen lectum citatoque in opere descriptum, in quercetis Fenniae inveniendum fore haud dubito.

*bb.* Setae per paria approximatae, laterales et ventrales; processus lobi cephalici segmentum buccale ex parte tantum findit.

*aaa.* Lobus cephalicus infra sulco longitudinali.

3. Sulcus lobi cephalici in apicem productus, ibidem impressionem l. excavationem format. Segg. corp. clx — clxxx.

**L. communis**, Hoffm. *Corpus cylindricum pigmento cutis caret; antrosum conspicue, retrorsum minime attenuatum, nec applanatum. Lobus cephalicus segmento buccalilongior; processus brevis, dimidiam ¶. tertiam partem lobi cephalici findit. Verrucae ventrales in XII, XIII, XIX et XXVI segmento. Cingulum conspicuum, medioere; XXVI, XXIX, XXX—XXXII, XXXIV, XXXVI; papillarum paria ij indistincta. Segmenta bi-et triannulata. Setae valde approximatae, par superius laterale. Long. circ. 200 m. m. (21+8+49).*

*Synon.* Lumbricus terrestris ex p. Linné F. Su. II. 504 № 2073. S. Nat. XIII.

Lumbricus anatomicus, Hoffmeister 1843 p. 188; Grube 99 & 145; Gerstfeldt 268; G. Johnston 60 & 330; (L. xanthurus 62, gordianus 63 et minor 59 & 329, G. Johnston?).

*Lumbricus communis*, Hoffmeister Regenw. 23; d'Udekem, Lombriciens, 36; Kessler 104; Eisen 962.

*Habitat* in humo, ubique frequentissimus. — Åbo, Reso, Skuru, Helsingfors, Mäntsälä; territory of Olonetz (Kessler).

*Obs!* The varieties mentioned by Hoffmeister and Eisen occur in Finland, though intermediary forms are very common. — *Lumbricus communis pellucidus* I once got under a couch of moss at the bottom of a small water-pit in the cleft of a mountain.

4. Sulcus lobi cephalici apici non attingit. Sægg. lxxx—c.

**L. chloroticus**, Sav. *Corpus angulare, antrorsum aliquantulum attenuatum. Cingulum magnum, prominens, glabrum; XXVIII, XXIX—XXXV, XXXVI, XXXVII, XXXVIII; papillarum paria ii; verrucae in IX segmento; segmenta rugis subtilissimis bi-l. triannulata angusta. Lobus cephalicus parvus, apice rotundatus; processus duas partes segmenti buccalis findit. Tubercula ventralia magna, in XIV—XVI-qu-segmentum extensa. Setae parum prominentes; per paria valde approximatæ; par superius laterale. Long. circ. 80 m. m. (11+5+35).*

*Synon.* Enterion chloroticum, Savigny-Cuvier 110.

Enterion virescens, Sav.-Cuvier 110.

*Lumbricus riparius*, Hoffmeister 1843 p. 189; Regenw. 30; Grube 99 & 145; d'Udekem, Lombriciens. 39; Eisen 965.

*Lumbricus viridis*, G. Johnston 60.

*Lumbrici minoris* var. virescens, G. Johnston 330.

*Lumbricus brevispinus?* Gerstfeldt 269.

*Habitat* in locis arenoso-argillaceis, passim. — Åbo. — Irritatus non effugit, in gyrum vero sese involvit.

*Obs!* As I never have found this species near the shores, I prefer giving it the name above, which besides fully correspond to the real colour of its body.

bbb. Lobus cephalicus infra sulco nullo. Segmenta xc—c.

**L. olidus**, Hoffm. *Corpus fere cylindricum, paululum applanatum, antrorsum parum attenuatum; pars corporis ante cingulum et linea in medio dorsi pone cingulum badia; segmenta cacterum incolorata. Lobus cephalicus perbrevis, pellucidus; processus dimidium segmenti buccalis findit. Cingulum rubicundum, crassum, molle; sæpe deest; XXIV, XXV—XXX, XXXI, segmenta ej vel vij complectitur. Papillae haud conspicuae. Segmentum anale penultimo brevius l. longitudine par est. Setae admodum approximatæ; setarum paria se invicem distantia. Segmenta triannulata, e poris dorsalibus succum secernent copiosum Lactucario redolentem. Long. 80 m. m. (15,5+6+35 m. m.).*

*Synon.* Enterion fetidum Savigny-Cuvier 110.

*Lumbricus olidus*, Hoffmeister 1843 p. 190; de Vermibus 24; Regenw. 32; d'Udekem, Lombriciens 40.

*Lumbricus foetidus*, Grube 99 & 145; G. Johnston 61 & 331; Eisen 960.



*Habitat* (in locis arenaceis; Hoffm.) — Runsala; Yläne.

cc. Setae se invicem spatiis aequalibus l. fere aequalibus distantes, dorsales, laterales et ventrales. Processus lobii cephalici segmentum buccale ex parte tantum findit.

**L. puter**, Hoffm. *Corpus angulare in utramque extremitatem aliquantulum attenuatum, aut totum badium aut, exceptis dorso partis ante cingulum lineaque in medio dorsi elevata badiis, pallidum. Lobus cephalicus parvus truncatus; processus latus, dimidiam segmenti buccalis findit; infra sulco nullo. Cingulum conspicuum; papillarum paria ij interdum conspicua; aut XXVI—XXXI, XXXII, aut XXIX—XXXIII, XXXIV, aut rarius XXVII—XXXII, XXXIII; segmenta vj vel vij [rar. v.] complectitur. Segmentum anale penultimo longius. Segmenta praecingularia bi-, post-cingularia triannulata. Setae prominentes vermem reddunt quasi octangularem. — In aquis occurrunt individua quorum cingula segmenta XXIX—XXXIII, XXXIV [rarius XXVII—XXXII, XXXIII] complexa sunt; papillarum paribus ij conspicuis, numeroque segmentorum lxxvij—cx; longit. 45 m. m. [12+3,5+20; 14+3+28]. — In arboribus truncisque putridis, sub cortice Tiliae vivae individua legi quorum cingula XXVI—XXXI, XXXII; papillae inconspicuae; numerus segmentorum cxlij; longit. 33,5 m. m. [8+3,5+22].*

*Synon.* Enterion octaëdram, Savigny-Cuvier 111 [non Hoffmeister].  
Lumbricus puter Hoffmeister [?] Regenw. 33; (pieter) d'Udekem,  
Lombriciens 41; Grube 99 & 145; Eisen 959.  
Lumbricus puter, G. Johnston 62.

*Habitat* (vide supra). — Åbo, Reso, Helsingfors, Mäntsälä; Parikkala (J. Sahlberg).

*Obs!* It appears strange to me that Hoffmeister has found »die Borstenpaare mehr genähert, als bei der vorigen Art (L. olidus)». — In this species as well as in the L. olidus the back is often highly ridged which is especially perceptible in specimens put up in spirit.

b. Tubercula ventralia in XIII corporis segmento.

**L. tetraëdrus**, Sav. *Corpus praesertim postice, quadrangulare; antrosum paululum, retrorsum magis attenuatum, concolor, flavidumbadium. Lobus cephalicus parvus pellucidus, segmento buccali brevior; processus brevis, angustus, dimidiam l. trientem segmenti buccalis findit; infra sulco longitudinali nullo. Cingulum aliquantum prominens; XXI, XXII—XXV, XXVI, XXVII; utroque latere sulco longitudinali terminatum. Setae per paria paululum approximatae, par superius latero-dorsale, unde habitus animalis quadrangularis. Segmenta lx—lxxx; segmentum anale prae-anali parum longius. Long. 23—28,5 m. m. [70 m. m. sec. Hoffm.] — [6+2+15; 7,5+3+18; 8+2,5+17; 7+2+15,5.]*

*Synon.* Enterion tetraëdram, Savigny-Cuvier 111.  
Lumbricus agilis, Hoffmeister 1843 p. 191; Regenw. 36; d'Udekem,  
Lombriciens 42.  
Lumbricus tetraëdrus, Grube 99 & 145; Eisen 967; G. Johnston 61.

*Habitat* in aquosis, ripis etc. haud rarus; agilis. — Fager-vik, Ekenäs, Helsing, Mäntsälä; Parikkala (J. Sahlberg).

In »Förhandlingar vid de Skandinaviske Naturforskarenes 2 möte» pag. 273, prof. Boeck tells that he has found in Norway six species of *Lumbricus*; of them three were found in the environs of Trondhjem and only one at Hammerfest. At the same leisure Dr Beck told himself to have found eleven different species in the environs of Ljåmfjorden. — Savigny (Cuvier. Histoire des progrès) describes twenty species.

Fam. TUBIFICINA, d'Udek. *Corpus annulatum. Lobus cephalicus in labrum superius, interdum valde longum productus. Segmenta corporis numerosissima. Tegumenta corporis muscosa, admodum pellucida. Series fasciculorum setarum jo, setae aut uncinatae, aut furcatae; interdum in eodem fasciculo reperiuntur setae et subulatae [capilli] et furcatae. Tubus cibarius rectus. Os segmento buccali inferius. Ventriculus musculosus deest; anus terminalis. Apparatus circulationis aut cordibus ij lateralibus, aut ramis lateralibus; rami vasorum sacculis coecis contractilibus terminati. Sanguis ruber l. luteoruber. Ovula pro exiguo corpore permagna, plura in capsulis conglutinata. Aquarum et dulcium et subsalarum incolae.*

A. Setae furcatae; rami vasorum indivisi.

**Tubifex.** *Fasciculi setarum superiores setis gaudent furcatis l. furcato-pectinatis, interdum capillis intermixtis. Rami vasorum in VIII segmento in corda transformati.\**

a. Tegumenta nuda; sanguis ruber.

aa. Fasciculi setarum capillis (setis subulatis) destituti.

\* A. S. Oersted (De regionibus marinis, Hauniae 1844 p. 68) gives to the genus *Tubifex* limits, that seem to me to be preferable to those of d'Udekem: »*Tubificis* genus differt a *Lumbricillo* praecipue setis dorsalibus partim capillaribus, partim uncinatis». — Thus the group *a* — *aa* might be disunited from that genus and, together with *Euaxes* and *Lumbriculus*, Grube, and *Helodrilus*, Hoffm., transferred into the familia *Lumbricillorum*, Oerst., whose nota characteristic is given in the following words: »*Lumbricillus, Lumbricillorum familiae typus, distinguitur setis et superioribus et inferioribus subulatis, abbreviatis ferme rectis*». However, as Oersted does not mention the relation of the blood-vessels, one cannot have regard for the limits given by him. — I also think it necessary to mention, that I have been unable to further investigations about *Tubificina*, *Enchytraeina* and *Naidina*, after that time as I got the papers of Diesing, d'Udekem, Claparède and Ratzel.

**T. elongatus**, d'Udek. *Corpus perquam longum, filiforme, segmentis constat circiter ccl, quorum longitudo latitudinem vix superat. Extremitas cephalica attenuata; segmenta posteriora rugis transversis in annulos minores subdivisa. Cutis pellucida. Os inferum, subterminale. Oculi nulli. Fasciculi setarum binarum-quinarum quaterni. Intestinum simplex [dirivacula saltem inconspicua]. Sanguis ruber. Vasa sanguifera ampla. Ramuli vasorum nulli. Long. circ. 70 m. m.*

*Syn.* Tubifex elongatus, d'Udekem 1855 p. 544; 1859.

*Naïs gigantea*, Kessler p. 106 (?). \*)

*Habitat:* in limo ad ligna submersa, quorum in rimas fissurasque irritatus sese retrahit. Liber in aqua pura asservatus in globulum sese contorquet. Aquarum dulcium incola. — Mäntsälä.

**T. [?] annellatus**, Kessler. *Corpus cylindricum, segmentis circiter lx confectum prominulis, quorum unumquodque intersectionibus profundis a proximis discretum, in annulos ij subdivisum, quorum quidem medius caeteribus latior magisque prominens. Corpus autem fere totum eadem latitudine gaudet, exceptis tantum summis extremitatibus, quas versus paullulum deerscit, segmentisque X, XI et XII. in quibus aperturae genitales. Lobus cephalicus a segmento buccali discretus. Setas brevissimas legit Kessler in fasciculis binas, interdum autem trinas. Segmenta X, XI et XII caeteris aliquanto crassiora; praeterea segmentum decimum subtus appendicibus ij lanceolatis ornatum. Color albido-cinereus. Long. 20 m. m., latit. 0,9.*

*Syn.* Stylodrilus Heringianus, Claparède 1862 [?].

*Enchytraeus annellatus*, Kessler 105.

Limo inhabitantem in sinu Ladogae Sartanlaks invenit Laptschinski, sec. Kessler.

*bb.* Fasciculi setarum setis subulatis l. capillis instructi furcatas intermixtis.

### **T. rivulorum**, d'Udek.

Huic speciei adscribo animal a Laptschinski in limo sinus Ladogae Sartanlaks inventum, Kessleroque allatum:

*Lobus cephalicus prominulo-conicus, a segmento buccali discretus. Os inferum. Corpus fere cylindricum, extremitates versus paullulum tantum attenuatum. Segmenta circiter xc, Cingulum crassum, segmentis quatuor, scilicet IX—XII, confectum. Segmenta IX et X subtus praeter fasciculos setarum, eosque interpositum, par offerunt verrucarum,*

\*) *Nota.* Diagnosi Naïdis giganteae Kessleri relata haec est: »Lobus cephalicus conicus, segmento buccali continuus. Habitus corporis eidem Naïdis papillosae. Kessler (= Tubifex Bonneti) assimilis. Oculi nulli. Setae omnes bifurcatae. Segmentum buccale setis destitutum. Fasciculi setarum quaterni setis gaudent in II. segmento octonis, III septenis, IV sexenis, V quinis, VI quaternis, VII—IX trinis, caeteribus in segmentis autem binis. Aperturae genitales in XI corporis segmento. Segmentorum numerus pro longitudine animalis varius. Individuum maximum longitudine gaudens m. m 65, latit. 2, segmenta obtulit ducentis plura. — Fragillimus est, ut integrum reperire animal facile nequeas».



quarum in apice aperturæ genitales. Fasciculi superiores bini segmentorum II—IX capillos complectuntur ternos-quaternos setasque furcato-pectinatas [ad formam pectinis pedicellati] quinos l. senos; fasciculi inferiores quaterni in segmentis octo anterioribus setis gaudent ternis; ceteri fasciculi et dorsales et ventrales binis tantum; capilli corporis diametro pares. Long. 28, latit. 0,6—0,8 m. m.

*Syn.* Saenuris umbellifera, Kessler 107.

**T. longicauda**, Kessler. *Lobus cephalicus prominulo-conicus, supra segmento buccali continuus. Extremitas postica valde producta attenuataque. In anteriore corporis extremitate fasciculi dorsales capillos complectuntur longos setasque furcatas. Numerus setarum in singulis fasciculis retrorsum decrescit. Color albidus. Long. 60—75, latit. antice 0,3 m. m.*

*Syn.* Saenuris longicauda, Kessler 107.

*Habitat* ad ligna submersa. — In rivulo Poventshanka legit Borsdinski, sec. Kessler.

**T. Bonnetii**, Clap. [?] l. **verrucosus**. *Corpus totum verrucis minimis opacis densissime adpersum, ut interanea vix conspiciere possis. Lobus cephalicus segmento buccali continuus, deorsum inclinatus; totus una cum segmento buccali retractilis, perparvus. Pars corporis ante cingulum idem versus aliquantum increscit, pone cingulum sensim at conspicue decrescit. [Cingulum X—XIV, XV; segmenta v vel vj complectitur.] Segmenta inter se longitudine inaequalia; media scilicet anterioribus, nec non posterioribus multo longiora; antica omnium brevissima; postica verrucis sparse oblecta, annulis quinque denis minoribus subdivisa. Segmenta corporis circiter lx [l. plura]. Oculi nulli. [Aperturarum genitalium in cingulo par vix conspicuum.] Fasciculi superiores bini capillos ternos senos setasque intermixtas furcato-pectinatas gerunt; inferiores autem bini setas furcatas ternas-quaternas quadranti longitudinis capillorum aequales; capilli corporis latitudine breviores; setae furcato-pectinatae verrucis cutaneis parum longiora. Intestinum simplex; vasa aegre conspicua, sanguis ruber, translucens animal reddit rosaceo-album. — Ad extremitatem posticam quorundam individuorum appendices observari claviformes, pedicellatas. [Infusoria generis Vorticellina, sec. Kessler.] Long. 20—25, latit. 0,9 m. m.*

*Syn.* Tubifex Bonneti, Claparède 1862.

*Naïs papillosa*, Kessler 105.

*Habitat* in limo ligna submersa obtegenti una cum Tubificide elongato, eodem aliquanto frequentior. Aquarum dulcium incola. Anticam extremitatem e limo exsertam perpetuo motitat, irritatus autem subito retrahit. — Helsing, Mäntsälä; Ladoga (Kessler).

*Obs!* There is no doubt about the *Naïs papillosa*, Kessler, being quite corresponding to the species above. Kessler has likely omitted the short forked bristles, scarcely surpassing the cuticular warts; those bristles besides one does not see otherwise than at 600 times magnifying. For the rest the description given by K. is striking.

If this species would not correspond to *Tubifex Bonnetii*, Clap., which, with regard to the succinct description given by this author, I am not able to decide, indeed the name »papillosus» ought to have priority; but as I cannot confidently identify this species with an other marine one, described by Claparède 1863 (o. cit.) by name of *Tubif. papillosus*, I have conditionally subjoined the name »verrucosus».

*Tubifex papillosus*, Clap., probably is identical to *Tubifex Benedii*, d'Udek., except that the warts in the former stand close to each other, in the later thinly (Vide: the figures given by d'Udekem 1855 and the description given by Claparède).

*B. Setae uncinatae* 1, furcatae; rami vasorum digitati 1. pinnati.

**Lumbriculus**, d'Udek. [*Lumbricillus*, Oersted] *Fasciculi setarum setis furcatis, abbreviatis ferme rectis; rami vasorum sacculis coecis contractilibus terminati, corda vero nulla.*

**L. variegatus**, d'Udek. et Ratzel. *Lobus cephalicus segmento buccali continuus non prolongatus. Os inferum, subterminale. Tractus intestinalis oesophago constat (segg. vij antica), intestino appendicibus pinnato (segg. xlvj) parteque indistincte pinnata (xxxvij); anus terminalis. Vas dorsale ramulis distincte tri — 1. quadripartitis; coeca lateralia in segmentis XV — ultimo, minime cum vase ventrali anastomotica usque ad quina dena ex quoque latere; praeterea in quoque segmento ansa reperitur rasis dorsalis cum ventrali anastomotica; coeca lateralia in stratum intestini glandulosum penetrant. Oculi nulli. Cutis pellucida, exceptis tantum segmentis aliquot anterioribus (vj—x) quorum strata externa pigmento viridi impellucida reddita sunt. Cingulum nullum. Segmenta xc—cxc, quorum latitudo longitudinem superat. Setae interdum indistincte furcatae-subulatae. Long. circ. 30 m. m.*

*Syn.* *Lumbricus variegatus*, O. F. Müller I. II. 26; Linné S. Nat XIII. 3084.

*Lumbricus rivalis?* Fabricius F. Groenl. 278.

*Lumbriculus variegatus*, Grube in Wiegmanns Archiv 1844 p. 210; it. Grube 101 et 144: d'Udekem 1859 p. 10; Claparède 1862; Ratzel 1868.

*Lumbriculus limosus*, Leidy sec. d'Udekem 1859 p. 10.

*Habitat* in aquis dulcibus, ubique haud frequens. — Abo, Helsingfors, Ingå, Mäntsälä.

*Nota.* *Tubificinorum* in familiam, generi autem incerto refero *Enchytraeum jubiformem*, Kessler p. 105: Corpus »regulariter cylindricum, segmentis constat circiter 1, aegre conspicuis; setae apicem versus paullulum compressae, per paria dispositae, in seriebus jv longitudinalibus. Aperturae genitales in XIV segmento. Long. 10—12 m. m., latit. 0,6—0,7 m. m.» —

Vermem hunc invenit Laptshinski limo inhabitantem in sinu Ladogae Sartanlaks.

**Fam. ENCHYTRAEINA**, d'Udek. *Segmenta multa. Cutis maseu-  
losa, pellucida. Lobus cephalicus, labrum superius formans, segmento  
buccali continuus; os inferum; tubus cibarius rectus, adest interdum  
dilatatio stomachalis. Apparatus circulationis simplicissimus; sanguis  
incoloratus. Cingulum conspicuum (organa genitalia includens). Ocula  
magna; singula capsulis inclusa. Fasciculi setarum brevissimarum  
clavatarum quaterni. — Terrae humidae incolae.*

**Enchytraeus**, Henle, unicum familiae genus.

a. Intestinum dilatatione stomachali destitutum; corpus cylindricum.

**E. galba**, d'Udekem (?) *Corpus postice aliquantulum, antrosum  
parum attenuatum, cylindricum; segg. lx-lxj; cutis subpellucida. Lobus  
cephalicus rotundatus, segmento buccali parum longior, bene terminatus.  
Orificium oris latum, totum fere marginem inferiorem segmenti buccalis  
occupat. Segmentum anale postice attenuatum, truncatum, penultimo  
longius, non latius. Corpora perigastrii (= Form-elemente der Körper-  
flüssigkeit, Raizel; Lymphkügelchen, Leydig) — — ? Setae rectae,  
divergentes; externae ejusque fasciculi maximae, intimae ij minimae;  
in segmentis praecingularibus senae, octonae, octonae, senae; in segmentis  
vero postcingularibus quaternae, senae, senae, quaternae; in segmentisque  
xj ultimis ubique quaternae. Long. 13 m. m., latit. : long. = 5 : 100.*

*Habitat* sub foliis madidis, nec non sub fucis ad littora maris; frequens. — Åbo, Helsingfors.

*Obs.!* There seems to prevail a very great confusion concerning the family of Enchytraeina, in as much as different authors have directed a peculiar attention to different organs and but very little taken notice of the alterations which depend on the development of those animals or on other circumstances. The »corpora perigastrii» for instance, I think, will vary very much, as for the more or less fine-granulose contents of them, before and after the animal has taken its food. The number of the spines also vary after age. — In Finland Enchytraeina are very common and occur almost every where amongst rotting leaves and wracks (*Fucus*) in the shores, as well as in the fields. — There are also specimens with spines of aequal length and lymphatic globules of almost round, flattened shape with very distinct kernel and numerous fine granules (*E. vermicularis*, d'Udekem?).

**Fam. NAIDINA**, d'Udek. *Cutis pertenuis, pellucidus. Lobus cephalicus segmento buccali continuus, saepe in labrum superius perquam longum protractus; labrum autem superius interdum deest. Os terminale l. subterminale inferum. Dilatatio stomachalis una l. plures. Tubus*



*cibarius rectus; anus terminalis, ciliis vibratilibus, interdum (Dero) appendicibus branchialibus obsitum. Sanguis aut incoloratus, aut ruber rubicundusve. Setae in fasciculis binis l. quaternis; aut omnes furcatae subulatae (capilli), aut utrumque. Ocula magna, singula capsulis inclusa.*

A. Appendices anales branchiales nullae; setae fasciculorum superiorum subulatae (capilli), inferiorum furcatae.

**Naïs, Müller.** *Os subterminale inferum. Tubus cibarius simplex. Cingulum nullum.*

a. Lobus cephalicus in filum l. rostrum longum productus; capilli in segmentis v. anticis desunt.

**N. proboscidea,** Müll. *Segmenta corporis XXX—XXXV; caput corpore latius, Oculi duo. In quoque segmento fasciculi ventrales setarum j—vj furcatarum quaterni, dorsales capillorum singulorum l. binorum bini. Capilli setis ventralibus quadruplo longiores. Long. 8 m. m.*

*Syn.* Naïs proboscidea, O. F. Müller I. II. 21; Grube 147; d'Udekem 1855 et 1859.

Stylaria lacustris, G. Johnston 70.

Aquarum dulcium nec non subsalarum incola. — Åbo, Helsingfors, Ingå, Nådendal.

b. Lobus cephalicus obtusus.

**N. elinguis,** Müll. *Pone caput fasciae transversae nullae. Capilli bini. Oculi duo. Setarum ratio longitudoque animaleculi aequae ut Naïdis proboscideae.*

*Syn.* Naïs elinguis, O. F. Müller I. II. 22; Grube 147; d'Udekem 1855 et 1859.

Aquarum dulcium incola. — Helsingfors, Nådendal.

B. Appendices anales nullae; setae superiores nullae; inferiores omnes rectae (indistincte furcatae?). Cingulum conspicuum.

**Clitellio,** Grube. *Setae rectae subulatae in fasciculis ventralibus quaternis.*

**C. minutus,** Grube (p. 147 ?). *Cutis pellucida. Lobus cephalicus continuus (?) parvus; os inferum subterminale. Tractus cibarius simplex, distincte in partes jo divisus, scilicet: pharynx (I—VI), oesophagus (VII—XIII), saccus oesophago amplior (segm. XV) et intestinum (XVI—XLIII) amplitudine oesophago par; anus terminalis. In segmento XI cingulum album, tumidum, amplitudine caetera segmenta superans, longitudine segmentis v l. vj aequale. Setae singulae senae. Oculi nulli.*

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